Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Use of Signal Boosters and Other Signal	)	WT Docket No. 10-4
Amplification Techniques Used with	)	
Wireless Services	)	

COMMENTS OF WCAI

Wireless Communications Association
International, Inc. (WCAI)
1333 H Street
Suite 700 West
Washington, DC 20005
(202) 452-7823

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wcainternational
WIRELESS COMMUNICATIONS ASSOCIATION

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INTRODUCTION

The Wireless Communications Association International, Inc. ("WCAI"), the trade association of the wireless broadband industry, submits these comments on the *Public Notice* released by the Federal Communications Commission in this proceeding on January 6, 2010.[1]

WCAI requests that the Commission take the following actions in this proceeding:

- Issue a Public Notice affirming that, under existing law, the use of signal boosters in the Wireless Radio Services in the United States without express authorization of a licensee is unlawful;
- Affirm that it is unlawful to market and sell devices for use with licensed networks that have not been approved for use by the licensee, and impose labeling requirements on marketing materials for signal boosters; and
- Reject calls for unlicensed use of signal boosters in the Wireless Radio Services.

[1] Wireless Telecommunications Bureau Seeks Comment on Petitions regarding the Use of Signal Boosters and Other Signal Amplification Techniques Used with Wireless Services, Public Notice, DA 10-14, WT Docket No. 10-4 (rel. Jan. 6, 2010) ("*Public Notice*").

DISCUSSION

I. The Commission should affirm that signal boosters operating in the Wireless Radio Services cannot be used in the United States without the express authorization of a licensee.

The purpose of Subchapter III of the Act is "to maintain the control of the United States over all the channels of radio transmission."[2] Section 301 thus provides that "[n]o person shall use or operate any apparatus for the transmission of energy or communications or signals by radio . . . except under and in accordance with this Act and with a license in that behalf granted under the provisions of this Act." The Commission also has authority to "[m]ake such regulations not inconsistent with law as it may deem necessary to prevent interference between stations . . . ."[3] Finally, Section 302a of the Act empowers the Commission to "make reasonable regulations . . . governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications."[4] Consistent with this authority, the Commission requires that stations in the "Wireless Radio Services must be used and operated only in accordance with the rules applicable to their particular service as set forth in this title *and* with a valid authorization granted by the Commission . . . ."[5] A license is thus required to use a device in the Wireless Radio Services.

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[2] 47 U.S.C. § 301.

[3] 47 U.S.C. § 303(f).

[4] 47 U.S.C. § 302a.

[5] 47 C.F.R. § 1.903(a) (emphasis added). Wireless Radio Services are defined as "[a]ll radio services authorized in parts 13, 20, 22, 24, 26, 27, 74, 80, 87, 90, 95, 97 and 101 of this chapter [47], whether commercial or private in nature." 47 C.F.R. § 1.907.

Section 1.903(c) of the Commission's rules provides that subscribers operating mobile or fixed stations in the Wireless Radio Services (with the exception of Rural Radiotelephone Service) do so pursuant to the authorization held by the licensee providing service to the subscribers and are not required to obtain individual mobile or fixed station licenses.[6] It is axiomatic that, because subscribers operate pursuant to the authorization held by their service provider, subscribers may operate mobile and fixed stations in Wireless Radio Services only with the licensee's authorization. Nevertheless, in its Petition for Rulemaking,[7] Wilson Electronics, Inc. relies on Rule 1.903(c) to argue that licensee consent is not required for subscribers to operate mobile amplifiers. This argument is contrary to the language of Rule 1.903(c), Commission precedent, and the structure of the Act.

As noted above, the Act generally requires that stations be licensed to operate in radiofrequency spectrum, and the Commission's rules specifically require such licensing in the Wireless Radio Services. Once a station license is granted, Section 310(d) of the Act provides that neither the station license, "*or any rights thereunder*, shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, directly or indirectly, or by transfer of control of any corporation holding such permit or license, to any person except upon application to the Commission and upon finding by the Commission that the public interest, convenience, and necessity will be served thereby."[8] When Rule 1.903(c) is read in

[6] 47 C.F.R. § 1.903(c).

[7] Petition for Rulemaking, Wilson Electronics, Inc., WT Docket No. 10-4 (filed Nov. 3, 2009) ("*Wilson Petition*").

[8] 47 U.S.C. § 310(d) (emphasis added).

conjunction with Section 310(d), it is clear that, although a subscriber may operate a station pursuant to a service provider's license, the subscriber may do so only with the service provider's consent and pursuant to the service provider's control. Otherwise, the service provider would violate the prohibition against assignment and transfer of its license rights in Section 310(d).

This view is supported by the Commission's secondary markets orders. In the first secondary markets order, the Commission reevaluated the line drawn under the *Intermountain Microwave*[9] test in the context of spectrum leasing. In doing so, the Commission noted that the linchpin for determining whether a licensee has transferred, assigned or disposed of a license or any license rights is *control*: "If the licensee continues to hold a sufficient degree of control over the non-licensee's use, there has been no transfer, assignment, or disposition."[10] The Commission then analogized spectrum leasing to cell phone subscribers.

> In this case, the licensee has authorized the subscriber to use the spectrum on a daily basis, even though the cell phone user operates – off-premises and without the presence of any representative of the licensee – a transmitting/receiving device that sends and receives electromagnetic communications over the licensed spectrum. Because the licensee continues to exercise a sufficient degree of control over such use, the licensee need not obtain prior Commission consent before permitting the subscriber to exercise the licensee's spectrum usage right, and Section 310(d) is not implicated.

The Commission concluded that, to avoid a *de facto* transfer of control, "the licensee must [among other things] retain responsibility for meeting all applicable frequency

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[9] *See Intermountain Microwave*, 12 FCC 2d 559, 560 (1963).

[10] *Promoting Efficient Use of Spectrum through Elimination of Barriers to the Development of Secondary Markets*, Report and Order and Further Notice of Proposed Rulemaking, FCC 03-113 at ¶ 77 (rel. Oct. 6, 2003).

coordination obligations and resolving all interference-related and RF safety matters, *as well as* the responsibility and direct accountability for the lessee's compliance with Commission policies and rules."[11] By separating the resolution of interference matters from bare compliance with the Commission's rules, the Commission made clear that the licensee, rather than its subscribers, controls the types of devices connected to the licensee's network, including devices that have received a valid equipment certification.

If the licensee were unable to control the types of devices connected to the licensee's network, the licensee would not be able to exercise the type of control contemplated by Sections 301, 303(f), and 310(d) of the Act. Instead, subscribers would exercise *de facto* control over the subscriber-operated portion of the network. In this scenario, subscribers would be allowed to operate pursuant to the service provider's license any device with a valid equipment certification, including devices that the licensee prohibits on the basis of interference concerns. Such a reading of the Act and the Commission's rules would, in effect, make devices used by subscribers in the Wireless Radio Services, which are well over the Part 15 power limits, eligible for unlicensed operation. Had the Commission intended that absurd result, it would have said so expressly in Part 15 of the Commission's rules.[12] Instead, Rule 15.1(b) provides that "[t]he operation of an intentional or unintentional radiator that is not in accordance with the regulations in this part

[11] *Id.* at ¶ 79 (emphasis added).

[12] The Commission did exactly that for the personal communications services band. See 47 C.F.R. § 15.301 (providing regulations for unlicensed personal communications services (PCS) devices operating in the 1920-1930 MHz band).

[Part 15] *must be licensed* pursuant to the provisions of section 301 of the Communications Act of 1934, as amended, unless otherwise exempted from the licensing requirements elsewhere in this chapter."[13]

Rule 15.1(b) makes clear that devices either operate pursuant to unlicensed authority in Part 15 or are licensed pursuant to Section 301 of the Act. There is no "middle ground" that would allow subscribers to operate devices outside of Part 15 and outside of a licensee's control. Such use would fall far outside any conceivable interpretation of the governing sections of the Act and the Commission's rules, as set forth above. If the Commission had intended to allow subscribers in the Wireless Radio Services to use any device that otherwise complies with the Commission's equipment certification requirements, the Commission would have created an unlicensed Part 15 model for subscriber equipment in the Wireless Radio Services, which would have rendered superfluous the language in section 1.903(c).

The *Wilson Petition* appears to concede as much where fixed stations are concerned[14] but attempts to draw a distinction between mobile and fixed stations based on the petitioner's view of the relative interference concerns. Specifically, the *Wilson Petition* relies in part on Rule 1.903(c) to argue that mobile handset amplifiers do not trigger the same concerns as fixed stations.[15] The problem with this argument is that Rule 1.903(c) by its own terms applies to both mobile *and*

[13] 47 C.F.R. § 15.1(b) (emphasis added).

[14] *See Wilson Petition*, *supra* note 7, at 8 (stating that the rules generally assume the use of fixed repeaters and signal boosters by licensees).

[15] *See Wilson Petition*, *supra* note 7, at 9.

fixed stations.[16] The distinction that the *Wilson Petition* attempts to draw is thus a distinction without a difference insofar as the Commission's rules are concerned.

The *Wilson Petition* also attempts to rely on the Commission's open platform rules and net neutrality proposal to support subscriber use of devices that have not been approved by the licensee. This reliance is also misplaced. In regard to the open platform rules applicable to the Upper Band C Block of the 700 MHz band, the Commission expressly provided that wireless service providers could "continue to use their own certification standards and processes to approve use of devices and applications on their networks,"[17] and stated that "a provider could exclude devices such as signal boosters and repeaters to the extent they are inconsistent with the technical or operational parameters of the network."[18] In regard to its proposed net neutrality rules, the Commission had indicated that they are intended to be *less* restrictive on service providers than the open platform rules adopted by the Commission in the 700 MHz band.[19] The *Wilson Petition's* construction of the proposed net neutrality rules would go much *further* than the 700 MHz rules by divesting service providers of control of their networks entirely. There is thus no support in the open platform rules or the net neutrality proposal for the result sought in the *Wilson Petition*.

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[16] *See* 47 C.F.R. § 1.903(c).

[17] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, FCC 07-132 at ¶ 223 (rel. Aug. 10, 2007).

[18] *Id*. at fn. 503.

[19] See *Preserving the Open Internet*, Notice of Proposed Rulemaking, 24 FCC Rcd 13064 at ¶ 169 (2009) (distinguishing between the proposed net neutrality rules and the open platform rules applicable to the Upper Band C Block in the 700 MHz band).

It's not surprising that the Commission continued to allow licensees to certify subscriber equipment for use on the licensees' Upper Band C Block networks. The Commission's flexible licensing approach applicable to many of the Wireless Radio Services inherently relies on licensees (and not device manufacturers) to avoid harmful interference and ensure efficient use of spectrum. Pursuant to the traditional "command and control" approach to spectrum licensing, the Commission specified station locations and technology protocols in specific bands (i.e., AM radio stations must use analog amplitude modulation). In the Balanced Budget Act of 1997, Congress added Section 303(y) to the Act, which expressly authorizes the Commission to pursue a more flexible approach to spectrum licensing so long as the Commission finds, among other things, that such use would not result in harmful interference among users.[20] Pursuant to this authority, the Commission does not dictate the specifics of device protocols or station locations; these specifics of network management are instead left to licensees to determine. Section 303(y) thus provides licensees with flexibility to exercise control over the interference environment experienced by the licensee's customers.

Finally, in an attachment, the *Wilson Petition* discusses a number of service-specific provisions in the Commission's various service rules, which the petitioner believes support its position that subscribers can use devices without the licensee's authorization. None of these provisions supports that position. Rule 22.927 expressly provides that Part 22 cellular system licensees "are responsible for exercising effective operational control over mobile stations receiving service"

[20] See 47 U.S.C. § 303(y).

through their systems. As noted above, a cellular licensee can hardly be said to exercise control over its systems within the meaning of Section 310(d) if subscribers can operate devices in the licensee's spectrum without the licensee's consent.

The *Wilson Petition* also relies indirectly on former Rule 22.514, which stated that subscribers could use only the mobile units the licensee consented to serve. The petitioner argues that, because the Part 22 cellular rules do not contain a similar provision, the Commission did not intend that cellular licensees exercise similar control over their subscribers. The inference is unpersuasive, however, because the limits of control are bounded by Section 310(d) whether or not the Commission specifies with precision in every set of service rules the extent to which a licensee must maintain control over its license. Even if there were a complete absence of any mention in the service rules of subscriber devices (which there is not), Section 310(d) would still apply. The express statement in Rule 22.514 is thus superfluous.

Although, as described above, WCAI believes the law is clear regarding the use of subscriber devices in licensed spectrum, WCAI agrees with CTIA that the Commission should expressly affirm that the use of signal boosters[21] in the Wireless Radio Services in the United States without express authorization of a licensee is unlawful.[22] An express affirmation by the Commission of the current state of the law

[21] The use of the term "signal booster" in these comments is intended to include all manner of amplifiers, repeaters, boosters, distributed antenna systems, and in building radiation systems that serve to amplify signals in the Wireless Radio Services.

[22] See Petition for Declaratory Ruling, CTIA – the Wireless Association, WT Docket No. 10-4 at 14 (filed Nov. 2, 2007) ("*CTIA Petition*").

would remove any doubt that licensee consent is required to operate a signal booster in licensed spectrum.

II. To ensure transparency and protect consumers, the Commission should (1) affirm that it is unlawful to market and sell devices for use with licensed networks that have not been authorized for use by the licensee, and (2) impose labeling requirements on marketing materials for signal boosters.

Even if the Commission clearly affirms that the authorization of a licensee is necessary to use signal boosters in the Wireless Radio Services in the United States, there is no guarantee that unscrupulous device manufacturers will not attempt to sell unauthorized devices to unknowing consumers. Indeed, device manufacturers are currently marketing and selling devices in the United States that may not be legally operated in the United States without a license or the consent of a licensee.[23] When a device manufacturer markets and sells a device for use with a licensee's network without the consent of the licensee, a device manufacturer violates Sections 301 and 302a of the Act and the Commission's rules governing the Wireless Radio Services.

Sections 302a and 301 of the Act and the Commission's regulations implementing these sections are the basis for the Commission's licensing and interference-protection regime governing the Wireless Radio Services. As noted above, section 302a(a) authorizes the Commission to adopt regulations that govern "the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in

[23] An example of this behavior is the General Mobile Radio Service, where devices are often sold directly to consumers without any warning that an FCC license is required for their operation. See http://en.wikipedia.org/wiki/General_Mobile_Radio_Service.

sufficient degree to cause harmful interference to radio communications."[24] Section 302a(b) prohibits the *sale and offering for sale* of devices that "fail to comply with regulations promulgated pursuant to [Section 302(a)]."[25] And section 301 prohibits the use of "any apparatus for the transmission of energy or communications or signals by radio . . . except under and in accordance with this Act and with a license . . ."[26] The Commission has implemented these sections by providing licensees in the Wireless Radio Services with exclusive use of their licensed frequencies and control over what devices, including signal boosters, are allowed to operate on their licensed networks. Thus, the marketing and sale of a signal booster for use on a licensee's network that has not been approved for use on that network by the licensee is unlawful. To prevent the continued marketing and sale of unauthorized signal boosters to consumers, the Commission should affirm this fact via Public Notice.

In addition, to ensure transparency and protect consumers, the Commission should require that the marketing materials for signal boosters capable of operation in the Wireless Radio Services include a clear and conspicuous warning that such devices cannot be operated without an FCC license or the express authorization of an FCC licensee.[27] The warning should also indicate that it is the responsibility of the subscriber to obtain an FCC license or ensure that the device is approved by an FCC

[24] 47 U.S.C. § 302a(a).

[25] 47 U.S.C. § 302a(b).

[26] 47 U.S.C. § 301.

[27] This request is similar to that made by Bird Technologies Group in its petition for rulemaking regarding Part 90. See Petition for Rulemaking, Bird Technologies Group, WT Docket No. 10-4 at 9 (filed Aug. 18, 2005).

licensee for operation. This warning should be included on all marketing materials, including websites, point-of-sale materials, and packaging materials. To the extent a rulemaking proceeding is required to adopt such labeling requirements, WCAI requests that the Commission institute such a rulemaking expeditiously.

III. The Commission should not provide for unlicensed use of signal boosters in the Wireless Radio Services.

The *Wilson Petition* asks the Commission to amend Part 20 of the Commission's rules to "codify" technical standards for the operation of signal boosters by subscribers on licensed networks. The proposed rules would in essence provide subscribers with the right to use signal boosters on an unlicensed basis (i.e., without obtaining a license *or* authorization from the licensee in licensed bands).[28] The Commission should not be fooled by this effort to dictate the terms of the subscriber relationship through the guise of "technical" rules. Adopting the proposed rules would harm consumers and reverse decades of Commission policy. WCAI therefore urges the Commission to summarily reject the *Wilson Petition's* proposed rules.

As noted in the *CTIA Petition*, signal boosters can cause harmful interference.[29] Indeed, Wilson concedes that "amplifiers and repeaters can cause interference to both CMRS networks and public safety systems."[30] Signal boosters

[28] Because the *Wilson Petition*, *supra* note 7, proposes an amendment to Part 20 rather than Part 15, the *Wilson Petition* would appear to be request a new form of "super-unlicensed" devices that are not subject to Part 15 power limits or the lack of priority codified in Rule 15.5(b). *See* 47 C.F.R. § 15.5(b). Pursuant to the propose rule, consumers would have an *absolute right* to operate unlicensed signal boosters in licensed spectrum even if those signal boosters caused interference to the licensee's service. Such a result would be a breathtaking departure from current practice.

[29] See *CTIA Petition*, *supra* note 21, at 10.

[30] *Wilson Petition* at 5.

are subject to oscillation, excessive gain, unintended retransmission, lack of coordination and improper installation, among other things.[31] The unlicensed approach proposed in the *Wilson Petition* does not even attempt to address all of these issues, and those it does address are sadly lacking in detail. That is not surprising. Because each carrier has its own approach to network design and operation, even those employing the same technology, it is difficult to envision the Commission adopting generic equipment certification requirements that would assure signal boosters cause no interference to subscribers on any of the myriad current and future networks.

The public interest would not be served by attempting to certify unlicensed signal boosters for use in licensed bands in the Wireless Radio Services. For bands licensed pursuant to flexible use policies authorized in Section 303(y), licensees prevent harmful interference and maximize spectrum efficiency through their certification testing processes, which assure that a device protects the network before it is deployed. Leaving detailed technical issues to licensees promotes economic efficiency because wireless service providers have incentives to ensure their customers have the best possible coverage with the highest quality of service at the lowest cost. To the extent a wireless service provider offers poor coverage or low service quality, or charges high prices, its customers can switch to an alternative provider. A licensee is thus directly answerable to its subscribers and has every incentive to maximize subscriber welfare through efficient and reliable spectrum use.

[31] *See, generally*, Reply Comments of Michael Candell, WT Docket No. 10-4 (filed Jan. 31, 2010).

Device manufacturers, however, are not directly answerable to a wireless service provider's customers as a whole. To the extent a device causes harmful interference to a licensee's subscriber that is not using the manufacturer's product, it is the licensee and victim subscriber that suffer harm, not the manufacturer or, for that matter, its customer. The manufacturer's incentive is to sell as many functioning devices as possible at the lowest cost. Unless the Commission's certification process is fully protective of every licensee's approach to network design and operation (and that is difficult to envision), interference to innocent subscribers is threatened. The unlicensed device manufacturer has no incentive to employ sophisticated technology to reduce interference to non-purchasers of its equipment unless mandated by the Commission; its incentive is to produce devices with the cheapest (not the best) technology possible.

It is thus not surprising that a device manufacturer – Wilson Electronics, Inc. – would encourage the Commission to mandate a lowest-common-denominator approach to signal booster technology. This form of rent-seeking behavior would shift costs from the manufacturer to licensees and consumers, thereby upending the entire notion of flexible use codified in Section 303(y) of the Act. The Commission should decline the invitation and summarily reject the rules proposed in the *Wilson Petition*.

CONCLUSION

For the foregoing reasons, WCAI respectfully requests that the Commission issue a declaratory ruling clarifying that the use of signal boosters in the Wireless Radio Services in the United States without express authorization of a licensee is

unlawful. WCAI also requests that the Commission impose labeling requirements on signal boosters, but otherwise leave the technical details of signal boosters to licensees.

Respectfully submitted,

WIRELESS COMMUNICATIONS
ASSOCIATION INTERNATIONAL, INC.

By: /s/ Fred Campbell
President & CEO

1333 H Street, NW, Suite 700 West
Washington, DC 20005
(202) 452-7823

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